



## IN THE UNITED STATES ELECTED OFFICE OF THE UNITED STATES PATENT AND TRADEMARK OFFICE UNDER THE PATENT COOPERATION TREATY - CHAPTER I

## INFORMATION DISCLOSURE STATEMENT

5 APPLICANT: Wolfgang Dreher, Christian Geppert and Matthias Althaus

**ATTORNEY** 

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SERIAL NO.:

**EXAMINER:** 

FILING DATE:

ART UNIT:

INTERNATIONAL APPLICATION NO.: PCT/DE2003/002997 10

INTERNATIONAL FILING DATE: 10 September 2003

INVENTION: "SPECTROSCOPIC IMAGING METHOD, DEVICE

COMPRISING ELEMENTS FOR CARRYING OUT SAID METHOD AND USE OF SAID IMAGING METHOD FOR

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CHARACTERISING MATERIALS"

## Mail Stop PCT

Commissioner for Patents P.O. Box 1450

Alexandria, VA 22313-1450 20

SIR:

In accordance with the provisions of 37 CFR 1.56, 1.97 and 1.98, it is requested that a citation and examination of the references listed on the attached Form PTO-1449 be made during the course of the examination of the aboveidentified application.

## REMARKS

Attached herewith is a copy of the International Search Report of May 13, 2004. In this Search Report, U.S. Patent Nos. 5,092,335; 5,189,369 and 5,391,989 were cited in Category A along with an article by Redpath et al and an article by Lee et al. Copies of these two articles and three U.S. Patent are attached herewith. Also cited in the Search Report, in Category X, is an article by Speck et al. A copy of that article is also attached herewith. In addition, an article by Dreher et al and European Patent Application 1 288 670 A were cited in Categories P and

X. Copies of these two references are also attached herewith, along with a copy of U.S. Patent No. 6,677,750, which claims priority from the same German Reference as European Patent Application 1 288 670 A.

On page 10 of the German-Language Application, an article by Pruessmann et al was cited. On page 16, an article by P. Van Der Meulen et al was cited. On page 19, an article by Pohmann et al was cited. Copies of these three articles are also attached herewith for the Examiner's review.

Respectfully submitted,

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Customer Number: 26574

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10/527382 CT/PTO 1 1 MAR 2005 Sheet 1 of 1

| Form PTO-1449  |                |   |             |                    |  | Docket No.   |           | Serial No. |  |
|--|----------------|---|-------------|--------------------|--|--------------|-----------|------------|--|
| INFORMATION DISCLOSURE CITATION  |                |   |             |                    | P05,007  |              | L         |            |  |
| IN AN APPLICATION  (use several sheets if necessary)   |                |   |             |                    | Dreher et al                                     |              |           |            |  |
|  |                |   |             |                    | Filing Date                                      |              | Group Art | Unit       |  |
|  |                | U.S   | S. PATENT I | OCUMENTS           | <u> </u>   |              | L         |            |  |
| Examiner's   | $\top$         |   |             |                    |  | G 1 1        | Filing Da | ite If     |  |
| Initials   |                | Document Number   | Date        | Name               | Class  | Subclass     | appropri  |            |  |
|  | AA             | 5,092,335   | 03/03/1992  | Le Bihan           |  |              |           |            |  |
|  | AB             | 5,189,369   | 02/23/1993  | Takane et al       |  |              |           |            |  |
|  | AC             | 5,391,989   | 02/21/1995  | Takane et al       |  |              |           |            |  |
|  | AD             | 6,677,750   | 01/13/2004  | Hennig et al       |  |              |           |            |  |
|  | AE             |   |             |                    |  |              |           |            |  |
|  | AF             |   |             |                    |  |              |           |            |  |
|  | AG             |   |             |                    |  |              |           |            |  |
|  | AH             |   |             | -                  | <b>†</b>   |              |           |            |  |
|  | AI             |   |             |                    |  |              |           |            |  |
|  |                | FORE  | IGN PATEN   | T DOCUMENTS        |  |              |           |            |  |
|  |                | Document Number   | Date        | Country            | Class  | Subclass     | Translat  | tion       |  |
| :  |                | Document Number   | Date        | Country            | Class  | Subciass     | Yes       | No         |  |
|  | AJ.            | 1 288 670   | 03/05/2003  | Europe             |  |              | See AD    |            |  |
|  | AK             |   |             |                    |  |              |           |            |  |
|  | AL             |   |             |                    |  |              |           |            |  |
|  | AM             | 1   |             |                    |  |              |           |            |  |
|  | AN             |   |             |                    |  |              |           |            |  |
|  | AO             |   |             |                    |  |              |           |            |  |
|  | AP             |   |             |                    | <del>                                     </del> |              |           |            |  |
|  | OTH            | ER PRIOR ART (In  |             |                    |  |              |           |            |  |
| AQ Speck et al, "Fast <sup>31</sup> P Chemical Shift Imaging using SSFP Methods", <u>Proc. Intl. Soc. Ma</u> |                |   |             |                    |  |              |           | Mag.       |  |
|  | AR             | Reson. Med., Vol. 10, 2002, p. 792  Redpath et al, "FADEA New Fast Imaging Sequence", Magnetic Resonance in   |             |                    |  |              |           |            |  |
|  | AK             | Medicine, Vol. 6, 1988, pp. 224-234   |             |                    |  |              |           |            |  |
|  | AS             | Lee et al, "Fast SSFP Gradient Echo Sequence for Simultaneous Acquisitions of FID and   |             |                    |  |              |           |            |  |
| <u> </u>   | - <del> </del> | Echo Signals", Magnetic Resonance in Medicine, Vol. 8, No. 2, Oct. 1988, pp. 142-150  |             |                    |  |              |           |            |  |
|  | AT             | Dreher et al, "Fast Proton Spectroscopic Imaging Using Steady-State Free Precession Methods", Magnetic Resonance in Medicine, Vol. 50, 2003, pp. 453-460.                       |             |                    |  |              |           |            |  |
|  | AU             | Pruessmann et al, "SENSE: Sensitivity Encoding for Fast MRI", Magnetic Resonance in   |             |                    |  |              |           |            |  |
|  |                | Medicine, Vol. 42, 1999, pp. 952-962.   |             |                    |  |              |           |            |  |
|  | AV             | Van Der Meulen et al, "Fast Field Echo Imaging: An Overview and Contrast Calculations", Magnetic Resonance Imaging, Vol. 6 (1988), pp. 355-368.                                 |             |                    |  |              |           |            |  |
|  | AW             | Pohmann et al, "Theoretical Evaluation and Comparison of Fast Chemical Shift Imaging Methods", <u>Journal of Magnetic Resonance</u> , Vol. 129 (1997), Article No. MN971245, pp |             |                    |  |              |           |            |  |
|  |                |   |             |                    |  |              |           |            |  |
| Examiner   |                | 145-160.  | Date Consid | lered              |  |              |           |            |  |
|  |                |   |             |                    |  |              |           |            |  |
| *EXAMINE   | R: Initis      | al if reference consid  | ered, wheth | er or not citation | is in conf                                       | ormance with | h MPEP    | 609.       |  |
| Draw line th   | irough cit     | tation if not in confo  |             |                    |  |              |           |            |  |
| communicati  | ion to app     | plicant.  |             |                    |  |              |           |            |  |